

LETTERS TO THE EDITOR.

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A Third Specimen of the Extinct "Dromaius ater," Vieillot; found in the R. Zoological Museum, Florence.

IN January 1803, a French scientific expedition, under Baudin, visited the coast of South Australia and explored Kangaroo Island, called by them "Isle Decrès." One of the naturalists attached to the expedition was the well-known F. Péron, who wrote an interesting narrative thereof. He noticed that Decrès Island was uninhabited by man, but, although poor in water, was rich in kangaroos and emu (*Casuars* he calls the latter), which in troops came down to the shore at sunset to drink sea-water. Three of these emus were caught alive, and safely reached Paris; we learn from the "Archives du Muséum" that one was placed in the Jardin des Plantes, and two were sent to "La Malmaison," then the residence of the Empress Josephine. We learn later that two of these birds lived to 1822, when one was mounted entire and placed in the ornithological galleries of the "Muséum," the other was prepared as a skeleton and placed in the comparative anatomy collections. No mention is made of the ultimate fate of the third specimen.

Péron was unaware that the emu he had found on the Kangaroo Island was peculiar and specifically quite distinct from the New Holland bird; this was found out much later, and *too late*; for after Péron and his colleagues no naturalist evermore set eyes on the pigmy emu of Kangaroo Island in its wild condition! It appears that when South Australia was first colonised, a settler squatted on Kangaroo Island and systematically exterminated the small emu and the kangaroos. When the interesting fact was ascertained that Péron's emu was a very distinct species quite peculiar to Kangaroo Island and found nowhere else, *Dromaius ater* had ceased to exist; and the only known specimens preserved in any museum were the two mentioned above, in Paris.

For some years past my attention had been drawn to a small skeleton of a Ratitæ in the old didactic collection of the R. Zoological Museum under my direction; it was labelled "Casorio," but was in many ways different from a cassowary; but other work kept me from the proposed closer investigation, and it was only quite recently, during a visit of the Hon. Walter Rothschild, on his telling me that he was working out the cassowaries, that I remembered the enigmatical skeleton. A better inspection showed us that it is, without the least doubt, a specimen of the lost *Dromaius ater*. I afterwards ascertained that it had been first catalogued in this museum in 1833; that most of the bones bore written on them in a bold round hand, very characteristic of the first quarter of the nineteenth century, the words "Casoar mâle;" and lastly, that during the latter part of Cuvier's life, about 1825-30, an exchange of specimens had taken place between the Paris and the Florence Museums. I have thus very little doubt that our specimen is the missing *third* one brought alive to Paris by Péron in 1804-5.

This highly interesting ornithological relic is now on loan at the Tring Museum, and can be seen there by any ornithologist in England who may wish to examine it. I intend shortly to give a fuller notice of this valuable specimen.

HENRY H. GIGLIOLI.

R. Zoological Museum, Florence, May 15.

Chlorophyll a Sensitiser.

IT was with a feeling of great satisfaction that I read the concluding lines of Dr. H. Brown's highly interesting presidential address (NATURE, September 14, 1899). I was glad to see that this distinguished chemist, to whom the physiology of plants is so much indebted, adopts certain views on the chlorophyll function, which I have been defending for more than a quarter of a century against the leading authorities of the German Physiological School (Sachs and Pfeffer). But since some slight errors seem to have crept into Dr. Brown's statements of my opinions on the subject, I may, perhaps, be allowed to bring forward the following corrections.

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Dr. Brown seems to believe that the analogy between the action of chlorophyll and that of a chromatic sensitiser was "first pointed out by Captain Abney" and "more fully elaborated" by me; and secondly, that I give "a far too simple explanation of the facts" by admitting a "mere physical transference of vibrations of the right period from the absorbing chlorophyll to the reacting carbon dioxide and water."

To begin with the less important question of priority, I must confess that up to this date I am not aware of Captain Abney's claims. Had I known them, I should have been the first to acknowledge my debt to that accomplished investigator, whose brilliant achievements in this line of research I have never omitted to admire. The fact that the dissociation of the carbon dioxide in the green leaf is affected by the rays of light absorbed by chlorophyll was for the first time established by my researches in 1873, and an account of these experiments presented to the International Congress of Botany in Florence (May 1874).¹ At the same date (1873) Prof. H. Vogel made his important discovery of the chromatic sensitisers, and in November 1875, E. Becquerel applied it to the chlorophyll-collodion plates. In May 1875 appeared my Russian work on the chlorophyll function, of which the French article² in the *Annales de Chimie et de Physique* of 1875, as expressly stated, is but an extract. In this French translation the idea that chlorophyll may be considered as a sensitiser is fully discussed. Consequently any claim of priority may be fairly advanced, only in favour of a paper having appeared in the short interval of a year—from May 1874, when I announced the fact, to May 1875, when I interpreted it in the light of H. Vogel's recent discovery. On consulting the *R. S. Catalogue of Scientific Papers*, I could not find any paper of Captain Abney's for this period 1874-1875.³

So far concerning the priority question. Passing to the second point, I am sorry to say Dr. Brown is decidedly in the wrong, for in my French paper just cited, and which probably escaped his notice, after discussing the quite recent discoveries of H. Vogel and Edmond Becquerel, I conclude: "Ou ne saurait pour le moment décider la question de savoir si cet effet serait dû uniquement à un phénomène physique, ou bien si la matière colorante prendrait part à la transformation chimique. Cette dernière manière de voir ferait rentrer l'action de cette matière (chlorophylle) dans la règle générale de l'action accélératrice des matières organiques dans les réactions photochimiques, car c'est généralement en absorbant les produits de la dissociation, effectué par la lumière, que les substances organiques détruisent cet équilibre qui tend à s'établir entre le corps décomposé et les produits de décomposition et c'est ainsi qu'une dissociation partielle aboutit à une décomposition complète."⁴ At a later date, in a report presented to the International Congress of Botany in St. Petersburg (1884), taking to account the subsequent photographic work on the sensitisers, I brought forward experimental proof that chlorophyll may be considered a sensitiser in Captain Abney's sense of the word: "La chlorophylle est un sensibilisateur régénéré à mesure qu'il se décompose et qui provoque en éprouvant une décomposition partielle la décomposition de l'acide carbonique."⁵

From all these quotations it may be inferred that I always kept in view the chemical aspect of the chlorophyll function, now advocated with such stress by Dr. Brown.⁶

But I did not content myself with such purely theoretical considerations, and ever since have been in search of what Dr.

¹ *Atti del Congresso Botanico tenuto in Firenze, 1875*, p. 108. At a still earlier date (*Botanische Zeitung*, 1869, No. 14), I found out the source of T. W. Draper's error, and proved that the process is chiefly due to the red rays of light.

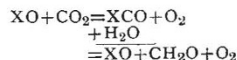
² "Recherches sur la décomposition de l'acide carbonique dans le spectre solaire par les parties vertes des végétaux" (Extrait d'un ouvrage "Sur l'assimilation de la lumière par les végétaux." St. Petersburg, 1875, publié en langue Russe) *Annales de Chimie et de Physique*, 5^e série, t. xli, 1877.

³ Prof. Pfeffer, in his account of the whole subject ("Pflanzenphysiologie." Zweite Auflage, pp. 325-341), goes so far as to attribute this sensitiser theory of the chlorophyll function to Prof. Reinke, whose paper appeared ten years later.

⁴ *L.c.* p. 40. In a footnote I add that certain physiological facts seem to agree with this point of view.

⁵ "État actuel de nos connaissances sur la fonction chlorophyllienne" (*Annales des Sciences Naturelles Botaniques*, 1885, p. 119).

⁶ At a still earlier date (in a Russian work on the "Spectrum Analysis of Chlorophyll." St. Petersburg, 1871) I even expressed Dr. Brown's present point of view in the form of an equation:



X being Dr. Brown's hypothetical "reduced constituent of chlorophyll."